Therefore, we sought to compare long-term clinical outcomes in patients with or without jailed SB after coronary bifurcation stenting.
Methods: We evaluated 664 patients who underwent successful PCI with DES for coronary bifurcation lesions from Sejong General Institute PCI database registry between April 2003 and December 2010. The patients who experienced PCI for left main bifurcation (n=146) and with 2 stent technique (n=55) were sequentially excluded. The primary endpoint was major adverse cardiac events (MACE), defined as the composite outcomes of cardiac death, non-fatal myocardial infarction (MI) and target lesion revascularization. Quantitative coronary angiography was performed in all study population. The jailed SB was defined as ≥ 50% residual stenosis after main vessel (MV) stenting.
Results: Three-hundred fifty five patients (76.7%) had not jailed SB, and one hundred eight patients (23.3%) had it. Jailed group had higher rates of triple vessel disease, true bifurcation lesion, and SB predilation, and lower rate of final kissing balloon dilation, compared to No- jailed group. Also, Jailed group had longer MV and SB lesion length. During follow-up (median 34 months), MACE occurred in 37 patients (8.0 %); 10 (9.3%) in the jailed group and 27 (7.6 %) in the No-jailed group (P=0.56 by log-rank test). In multivariate analysis, jailed SB was not associated with a higher incidence of MACE (hazard ratio [HR]: 0.69, 95% confidence interval [CI]: (0.32-1.48). If jailed SB was defined as ≥ 75% residual stenosis, jailed SB was still not associated with a higher incidence of MACE (hazard ratio [HR]: 0.97, 95% confidence interval [CI]: (0.28-3.35)
Conclusions: Our registry data suggest only angiographic severity of residual stenosis in SB after MV stenting cannot predict long-term clinical outcome in patients with coronary bifurcation lesion.

TCT-395

Our experience with Absorb -Bioresorbable vascular scaffold in bifurcation lesions - strategies, immediate results and 30 day outcome

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Background: Studies have reported the safety and efficacy of Absorb - BVS in Type A lesions. We present our initial experience of using Absorb in bifurcation lesions.
Methods: From December 2012 to June 2013, we have treated from 9 patients with 12 bifurcation lesions using ABSORB BVS using different strategies. Of these LAD/diagonal were seen in 8 patients, LCx /OM 3 patients and RCA in 1 patient. The type of bifurcation were Medina 1, 1, 1 - 4 (33.33); 1, 0, 0 – 4 (33.33 %); 1, 1, 0 – 2 (16.66 %); 0, 0, 1 – 1 (8.33%) and 0,1,1 (8.33 %).
Results: We classified bifurcation treatment as, B0 (Single wire in main branch, no wire in side branch), B1 (2 wires in main and side branch and no balloon dilatation of side branch), B2 (2 wires in main and side branch with balloon dilatation of the side branch and B3 (2 wires in main and side branch and another scaffold in the side branch). In B2 and B3 cases, we adopted either high pressure snuggle or low pressure kissing balloon dilatation. Our treatment strategy was B0 – 4 (33.33 %), B1- 5 (41.66 %), B2- 2 (16.66%), B3 - 1 (8.33%). OCT guidance was used in 5 patients (55.55%). Two patients were treated with B2, of that one had a snuggle dilatation and the other low pressure kissing. One patient treated with B3 had 2 scaffolds both deployed in LAD and diagonal using TAP technique and final high pressure snuggle. Immediate outcome were good in all the patients with TIMI III flow, no significant residual lesions and no MACE during hospital stay. There were no scaffold thrombosis or MACE at 30 days clinical follow up.
Conclusions: Our initial experience in small group using ABSORB BVS in bifurcation lesions with different strategies showed it is safe to jail the side branch even without intervention to the side branch. Provisional T stenting strategy and in selected cases TAP technique is feasible with OCT showing optimal deployment with good immediate and 30 day outcome will be presented. The strategy of final low pressure kissing balloon vs high pressure snuggle needs to be studied further although high pressure snuggle has shown promising immediate outcome with good apposition seen by OCT imaging.

TCT-396

Use of ABSORB™ Bioresorbable vascular scaffold for treatment of Coronary Bifurcation lesions – "Real ABSORB Registry"

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Background: Everolimus eluting ABSORB™ bioresorbable vascular scaffold (BVS) represents a novel approach for PCI with transient vessel support and drug delivery without the long term limitations of metallic DES. It has been approved for unrestricted clinical use in many countries including India since late 2012. However concern exists regarding its use in Bifurcation lesions (BL) and it has been recommended to avoid using across side branch (SB) ≥ 2.00 mm. As nearly 20% of the percutaneous coronary intervention (PCI) are performed for BL, we present on the first experience of the use of ABSORB BVS in BL from our real world "Real ABSORB Registry".
Methods: Our "Real ABSORB Registry" is a single centre registry of all BVS implanted in real life patients since its approval for unrestricted clinical use from December 2012 onwards.
Results: Out of the 108 patients with 136 lesions, 184 BVS was implanted. Among them 48 patients had Bifurcation lesions treated with 64 BVS. 58% had Medina 1,1,1 , 33% had 1,1,0 and 9% had 1,0,1 lesions.7/48 (14.5%) patients were planned for two stent strategy (V stenting in 2 & T stenting in 5) and 41/48 (85.5%) patients were planned for provisional single stent strategy. Side branch protected with wire and jailed in 32/48 (66%) patients. SB re crossed through BVS cells in 20/32 (62.5%) patients.In 12/20 (60%) patients low pressure simultaneous inflation of MB and SB (SNUGGLE inflation) done. 3/12 (25%) patients had threatened closure of SB following Snuggle inflation and had SB stenting with BVS using TAP technique. BVS deployment was successful in all patients and optimal deployment confirmed in 10/48 (20.8%) using OCT. No MACE including Target lesion failure (TLF)and Target lesion revascularization (TLR) occurred to discharge nor to current clinical follow up (median 143 days, range 17-163)
Conclusions: Our Real life experience of BVS implantation in bifurcation lesions with a major SB suggests that use of ABSORB™ BVS is feasible with successful deployment and favorable short to mid term follow up. SB access, optimization and salvage is feasible while stenting Main branch with ABSORB™ BVS.

TCT-397

Abstract Withdrawn

TCT-398

Long-Term Clinical Outcomes of 'Complete, Incomplete and Reasonably Incomplete' Revascularization after Percutaneous Intervention of Unprotected Left Main Coronary Artery Disease with Drug-Eluting Stent

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Background: PCI for ULMCA has recently been upgraded to class-IIB indication in ACC/AHA guidelines. ULMCA disease is frequently associated with distal disease. However, there are no available data to compare the long-term clinical outcomes in patients undergoing PCI of ULMCA disease and achieving CR or ICR.
Methods: A total of 910 consecutive patients with ULMCA disease undergoing DES implantation were prospectively enrolled in the study. Angiographic CR was defined as revascularization in all diseased segments with diameter ≥1.5mm (CR-1, according to the Synergy between PCI with Taxus and cardiac surgery [SYNTAX] classification) or ≥2.5mm (CR-2). Reasonable ICR (R-ICR) was defined as patients having a diameter stenosis ≥50% post treatment in diseased segments with diameter between 1.5mm and 2.5mm. The primary endpoint was the incidence of major cardiac adverse event (MACE: a composite of cardiac death, myocardial infarction [MI] and target vessel revascularization) at 5-year follow-up.
Results: Angiographic CR-1 was achieved in 386 (42.4%) patients and CR-2 in 613 (67.4%) patients. Patients with ICR had worse outcomes than those that had CR (MACE: 26.5% vs. 15.5%, p<0.001; all-cause death: 10.1% vs. 6.2%; p=0.037 in CR-1 stratification; and MACE: 29.6% vs. 18.1%, p<0.001; all-cause death: 12.5% vs. 6.5%; p=0.003 in CR-2 stratification). Patients with CR or R-ICR (n=277, 24.9%) had no difference in mortality (7.0% vs. 6.2%, p=0.69), though R-ICR group had higher incidence of MACE, largely driven by repeat revascularization. On multivariate analysis, the SYNTAX score and presence of multivessel disease and chronic total occlusion were independent predictors of ICR. Finally, patients with ICR in distal LM lesions (n=32, 3.5%) had substantially poor outcome and most of events occurred within the first year follow-up.
Conclusions: Angiographic ICR has a negative impact on long-term clinical outcomes in the patients with ULMCA disease treated with DES. R-ICR showed similar safety compared with the strategy of revascularized all diseased vessels with diameter ≥1.5mm and may indeed be optimal revascularization strategy in certain patient groups.

TCT-399

The Anatomical- and Clinical-based NERS Score II to Predict Clinical Outcomes after Stenting Unprotected Left Main Coronary Artery Disease: Results from a Multicenter, Prospective, Registry Study

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Background: The anatomical, clinical, and procedure-based NERS score was superior to the SYNTAX score in predicting MACEs after stenting UPLMCA. The complexity of the calculation was its major limitation.
Methods: The NERS score II was derived from our previous two studies and externally compared with the NERS and SYNTAX scores in 1463 patients with UPLMCA who underwent implantation of a DES in a prospective, multicenter, registry trial. The primary end point was MACEs at one year after the index

procedure, including myocardial infarction (MI), cardiac death, and target vessel revascularization (TVR).
Results: The NERS score II system consisted of 16 (7 clinical and 9 angiographic) variables. An NERS score II ≥19 demonstrated enhanced MACE sensitivity and specificity of 84.0% and 76.0% (MACE as the state variable), respectively, which were similar to the NERS score but significantly higher compared to the SYNTAX score. An NERS II score ≥19 was the only independent predictor of cumulative MACEs (hazard ratio: 3.27; 95% CI: 1.86 to 5.23; p≤0.001) and stent thrombosis (odds ratio: 22.15; 95% CI: 12.47 to 57.92; p≤0.001) at follow-up
Conclusions: The NERS score II, similar to the conventional NERS score, is more predictive of MACEs than the SYNTAX score in UPLMCA patients after implantation of a DES.

TCT-400

Everolimus-Eluting Stent and Dedicated 2-Stent Strategy in Complex 'True' Bifurcation Lesion with Major Side Branch Involvement

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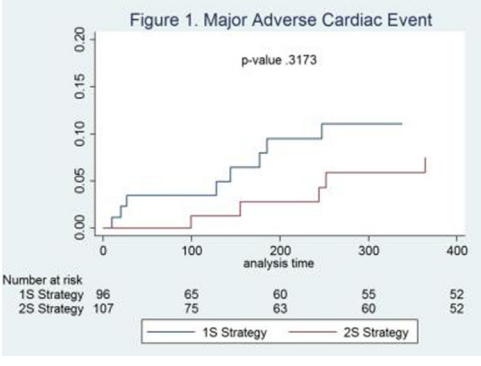
Background: Percutaneous coronary intervention (PCI) of complex true coronary bifurcation lesions is challenging and whether to stent side branch dedicatedly is still debatable. To date there is no published study showing the safety and efficacy of the Everolimus-eluting stent (EES) in true bifurcation lesions with major side branch (SB) involvement treated with dedicated 2 stents (2S). We sought to compare outcomes of a dedicated 2S with a provisional 1S strategy in these unique patients.
Methods: We identified 203 patients with complex true bifurcation lesions (Medina: 1,1,1; 1,0,1; and 0,1,1) with a minimum SB diameter of >2.3mm (assessed by quantitative coronary angiography) who underwent bifurcation PCI using EES from February 2010 to December 2011. The PCI strategies included provisional 1S (n=96) and dedicated 2S (n=107) technique. Survival curves were constructed for time-to-event variables with Kaplan-Meier methodology and compared by log-rank test.
Results: The baseline characteristics were well matched between two PCI strategies. In hospital major adverse cardiac event (MACE) and post procedure MI (CK-MB>3xNormal) (10.42% provisional stent vs. 7.48% 2-Stent implantation, P=0.46). At 1-year follow-up, MACE rates were similar for both (2S vs. 1S) techniques. Time to MACE event analysis is depicted with log rank test (P=0.31).
Conclusions: With EES use, a dedicated 2S technique appears to be a safe and effective PCI strategy in patients with complex true bifurcation lesion with large side branch vessel involvement.



TCT-401

Long Term Follow Up of Patients Undergoing Distal Left Main-Bifurcation Stenting via Transradial versus Femoral Approach

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Background: The present study aimed to compare the immediate success and long-term follow up between the femoral (TF)and transradial (TR) approach for stenting of unprotected distal left main (LM) bifurcation lesions.
Methods: 412 consecutive patients with distal LM bifurcation lesions underwent stent implantation (226 in the transradial group and 186 in femoral group) were enrolled. The primary endpoint was major adverse cardiac events (MACE), a composite of cardiac death, myocardial infarction, and target vessel revascularization. In hospital mortality and bleeding, follow up MACE were compared according to vascular access method.
Results: Clinical and angiographic characteristics (Syntax score) were similar between groups. 6Fr catheter were more commonly used in TR(100%, TF 15%). 2 stents technique were less commonly used in TR (32% vs 51% P < 0.01). All patients were implanted with drug eluting stents. For TR patients, bifurcation stent technique included Culotte (40%), modified crush (35%), T stent (25%), For TF patients ,bifurcation strategies were crush (60%), T stenting (17%), Culotte (17%) and kissing or V stenting (6%). Use of intravascular ultrasound were also similar between two access(40 % versus 36% p= 0.42) . No cross over between 2 groups. No significant differences were observed between TR and TF methods for procedural success (92% TR vs. 96% TR, p = 0.24) or total procedural time. However, duration of hospital stay and in-hospital occurrence of major or minor bleeding (1.6% vs. 3.5%, p <0.01) were significantly lower with TR access. In hospital mortality rate is similar (TR 0.8% vs. TF 2.1% p=0.28). Over a median follow-up period of 36 months, rates of MACE did not statistically differ among TR and TF groups (10.6%, vs. 11.8% p= 0.69), respectively. Cox regression showed that two stent (OR 1.21 95%CI 1.05 – 5.12 p < 0.01) but not access route were negative predicative factor for MACE.
Conclusions: TR access for LM bifurcation stenting is not inferior to TF in term of efficacy and long term follow-up but associated with decreased rate of bleeding.

TCT-402

The Efficacy of a "Reversed Wire Technique" for Treating Bifurcation Lesions in Percutaneous Coronary Intervention -"Tips & Tricks" for salvaging the side branch -

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Background: An acute side branch occlusion after stent implantation due to unsuccessful wire-crossing of the side branch could induce myocardial damage and contribute to poor long term outcomes. However, the necessary wiring to cross extremely angulated bifurcation is distressed.
Methods: The aim of this study was to evaluate the safety and feasibility of a "Reversed Wire Technique [RWT]" for treating bifurcation lesions in PCI. This technique requires hydrophilic-coated wire with a hairpin bend curve at the tip and a double lumen microcatheter.
Results: Of 3,847 consecutive lesions treated with PCI from Aug 2009 to May 2013, RWT was used in 21 cases including 7 CTO cases. Of 18 bifurcation lesions treated with RWT, 18 cases had previous failed attempts of wiring to the side branch via regular methods (The mean number of used wire before RWT was 1.7±0.9). The bifurcation lesions treated with RWT were most frequently located in the left anterior descending artery (57%) followed by the left circumflex artery (24%), and the right coronary artery (19%). The mean angle between the main-vessel and the side-branch was 131±21 degrees. Successful wire crossing was achieved in 81% of cases. All cases using RWT underwent kissing-balloon inflation after wire-crossing. The patency of the side-branch immediately after the procedure was 100%, if RWT was successful.
Conclusions: The RWT is a useful method for the salvage of extremely angulated bifurcation lesions and for eliminating wasted wire, although this technique required several "Tips and Tricks". This technique also can be applied to CTO procedure.

POSTERS